

CLAIMS

1. A display device comprising:

a display for displaying an image with luminance
5 corresponding to a video signal inputted from the exterior;
a temperature estimation circuit for estimating from
said video signal a temperature estimated value corresponding
to the temperature of a display screen of said display;
an operation circuit for finding a temperature
10 difference estimated value using a reference value
corresponding to the temperature of the outer periphery of
said display and said temperature estimated value; and
a control circuit for controlling the luminance of the
image displayed on said display on the basis of said
15 temperature difference estimated value.

2. The display device according to claim 1,
characterized in that said temperature estimation circuit
estimates the temperature estimated value corresponding to
20 the temperature of the outer periphery of the display screen
of said display.

3. The display device according to claim 1,
characterized in that
25 said display comprises first and second boards between

which a plurality of light emitting elements are formed and to which its outer periphery is fixed, and

the outer periphery of said display includes a portion between the light emitting element positioned in the 5 outermost periphery out of said plurality of light emitting elements and a fixed portion of said first and second boards.

4. The display device according to claim 1, characterized in that

10 said temperature estimation circuit estimates said temperature estimated value by integrating data relating to the luminance from said video signal and subtracting the amount of dissipated heat therefrom, and

15 said operation circuit subtracts said reference value from said temperature estimated value, to find said temperature difference estimated value.

5. The display device according to claim 1, characterized in that said control circuit lowers the 20 luminance of the image displayed on said display with the increase in said temperature difference estimated value.

6. The display device according to claim 1, characterized in that said control circuit lowers the maximum 25 luminance of the image displayed on said display with the

increase in said temperature difference estimated value.

7. The display device according to claim 1,
characterized in that

5 said display displays the image with a gray scale
corresponding to said video signal out of a plurality of gray
scales, and

10 said control circuit lowers the luminance of the image
displayed on said display at the same ratio for each of the
gray scales.

8. The display device according to claim 1,
characterized in that

15 said display displays the image with a gray scale
corresponding to said video signal using a plurality of light
emitting formats which are the same in the total number of
gray scales and differ in the number of light emitting pulses
on each of the gray scales, and

20 said control circuit controls the luminance of the image
displayed on said display using the light emitting format
selected depending on the temperature difference estimated
value out of said plurality of light emitting formats.

25 9. The display device according to claim 1,
characterized in that said control circuit divides the

display screen of said display into a plurality of blocks, extracts from the plurality of blocks the peripheral block adjacent to the outer periphery of the display screen, and lowers the luminance of said peripheral block.

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10. The display device according to claim 1, characterized in that said control circuit divides the display screen of said display into a plurality of blocks, extracts from the plurality of blocks the peripheral block adjacent to the outer periphery of the display screen, and makes the luminance of said peripheral block lower than that of the block inside the display screen of said display.

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11. The display device according to claim 1, characterized by further comprising

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a block extraction circuit for dividing the display screen of said display into a plurality of blocks and extracting from said plurality of blocks the peripheral blocks adjacent to the outer periphery of the display screen,

20 said temperature estimation circuit estimates the temperature estimated values for said peripheral blocks,

said operation circuit finds a peripheral block temperature difference estimated value from the temperature estimated values estimated for the peripheral blocks, and

25 said control circuit controls the luminance for each of

the peripheral blocks on the basis of the peripheral block temperature difference estimated value.

12. The display device according to claim 11,
5 characterized in that said control circuit controls the luminance for each of said peripheral blocks such that the amount of controlled luminance between the adjacent peripheral blocks is smoothly changed on the basis of the peripheral block temperature difference estimated value.

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13. The display device according to claim 1,

characterized by further comprising

a block extraction circuit for dividing the display screen of said display into a plurality of blocks and
15 extracting from said plurality of blocks the peripheral blocks adjacent to the outer periphery of the display screen,

said temperature estimation circuit estimates the temperature estimated values for said peripheral blocks,

20 said operation circuit finds, out of the temperature estimated values estimated for the peripheral blocks,

peripheral block temperature difference estimated values for the peripheral blocks, and extracts from the peripheral block temperature difference estimated values the maximum peripheral block temperature difference estimated value, and

25 said control circuit controls the luminance of the image

displayed on the display on the basis of the maximum peripheral block temperature difference estimated value.

14. The display device according to claim 1,
5 characterized in that said reference value includes a plurality of reference values which differ depending on the position of the outer periphery of said display.

15. The display device according to claim 1,
10 characterized by further comprising a measurement circuit for measuring the temperature of the outer periphery of said display and outputting to said operation circuit the reference value corresponding to the measured temperature.

15. 16. A luminance control method for a display device comprising a display for displaying an image with luminance corresponding to a video signal inputted from the exterior, characterized by comprising the steps of:

estimating from said video signal a temperature
20 estimated value corresponding to the temperature of a display screen of said display;

finding a temperature difference estimated value using a reference value corresponding to the temperature of the outer periphery of said display and said temperature
25 estimated value; and

controlling the luminance of the image displayed on said display on the basis of said temperature difference estimated value.

5 17. The luminance control method for the display device according to claim 16, characterized in that said temperature estimating step comprises the step of estimating the temperature estimated value corresponding to the temperature of the outer periphery of the display screen of said display.

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18. The luminance control method for the display device according to claim 16, characterized in that
said display displays the image on a gray scale corresponding to said video signal using a plurality of light emitting formats which are the same in the total number of gray scales and differ in the number of light emitting pulses on each of the gray scales, and

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20 said controlling step comprises the step of controlling the luminance of the image displayed on said display using the light emitting format selected depending on the temperature difference estimated value out of said plurality of light emitting formats.

19. The luminance control method for the display device
25 according to claim 16, characterized in that said controlling

step comprises the step of dividing the display screen of said display into a plurality of blocks, extracting from the plurality of blocks the peripheral blocks adjacent to the outer periphery of the display screen, and lowering the 5 luminance of said peripheral blocks.

20. The luminance control method for the display device according to claim 16, characterized by further comprising the step of dividing the display screen of said display into 10 a plurality of blocks and extracting from said plurality of blocks the peripheral blocks adjacent to the outer periphery of the display screen,

said temperature estimating step comprises the step of estimating the temperature estimated values for said 15 peripheral blocks,

said temperature difference estimated value operating step comprises the step of finding a peripheral block temperature difference estimated value from the temperature estimated values estimated for the peripheral blocks, and

20 said controlling step comprises the step of controlling the luminance for each of the peripheral blocks on the basis of the peripheral block temperature difference estimated value.

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